What is claimed is:

1. A switch matrix comprising:

an electrically grounded housing having:

a first housing section having an input port for receiving a first feed line, said first housing section containing a first switch head of each of a plurality of switch assemblies;

a second housing section having an input port for receiving a second feed line, said second housing section containing a second switch head of each of a plurality of switch assemblies;

wherein only one of said plurality of switch assemblies of said first and second housing sections is common;

a hollow thimble section joining said first and second housing sections and encasing a section of said common switch assembly;

said common switch assembly comprising:

a connecting conductor for providing a transmission path between said first and second switch heads of said common switch assembly;

a first switching assembly insulator having a bearing assembly for receiving a first distal end of said connecting conductor;

a second switching assembly insulator having a bearing assembly for receiving a second distal end of said connecting conductor; and

said first and second switching assembly insulators providing isolation of the connecting conductor from said housing.

2. The switch matrix of claim 1, wherein said bearings of said switching assembly insulators are rotary bearings.

3. The switch matrix of claim 1, further comprising:

a plurality of indicators mounted on the outside of said housing to indicate the orientation of the switch assembly, each of said indicators mechanically joined to a separate one of said switch heads contained in said second housing section.

4. The switch matrix of claim 1, further comprising:

a first switch blade contact connected to one end of a conductor line of said switch head, a second end of said conductor line of said switch head connected to the connecting conductor; and

a second and third switch blade contact of said switch head connected to a high conductivity plate, said second and third switch blade contacts and said high conductivity plate being electrically isolated from said conductor line of said switch head.

5. The switch matrix of claim 4, further comprising:

a separate switch head insulator plate provided between each of said first plurality of switch heads in said first housing section; and

each of said switch head insulator plates containing a first set of finger contacts for engaging said switch blade contacts of a first of adjacent switch heads and a second set of finger contacts for engaging said switch blade contacts of a second of adjacent switch heads, said switch head insulator plates providing isolation of said finger contacts from said housing.

6. The switch matrix of claim 5, further comprising:

a corona shield provided around said first set of finger contacts of each switch head insulator plate; and

a corona shield provided around said second set of finger contacts of each switch head insulator plate.

7. The switch matrix of claim 5, further comprising:

a grounding clip connected to said first housing for engaging said switch blade contacts of said switch head to provide a ground path for said conductor line of said switch head or said high conductivity plate of said switch head.

8. The switch matrix of claim 7, further comprising a motor for rotating said common switch assembly.

9. The switch matrix of claim 8 further comprising a drive shaft connected at one distal end to an insulating end plate of the first switch head of said common switch assembly and at the other distal end to the motor.

10. The switch matrix of claim 1, wherein said first switching assembly insulator is connected between said thimble section and said first housing section and said second insulator is connected between said thimble section and said second housing section.

11. A method of constructing a switch matrix, comprising the steps of:

connecting a first switch assembly insulator having a bearing therein between a first housing section and a first end of a first hollow thimble section;

placing a first distal end of a first connecting conductor into the bearing of the first switch assembly insulator;

placing a bearing assembly of a second switch assembly insulator on a second distal end of said first connecting conductor at a second end of said first hollow thimble section; and

connecting said second end of said first hollow thimble section to a second housing section with the second switch assembly insulator in between.

12. The method of claim 11 further comprising the steps of:

inserting a first switch head through an opening in a wall of said first housing section and joining the first switch head to the first distal end of the connecting conductor; and

inserting a second switch head through an opening in a wall of said second housing section and joining the second switch head to the second distal end of the first connecting conductor.

13. The method of claim 12, further comprising the steps of:

connecting a third switch assembly insulator having a bearing therein between said first housing section and said first end of a second hollow thimble section;

placing a first distal end of a second connecting conductor into the bearing of the third switch assembly insulator;

placing a bearing assembly of a fourth switch assembly insulator on a second distal end of said second connecting conductor at a second end of said second hollow thimble section; and

connecting said second end of said second hollow thimble section to a third housing section with the fourth switch assembly insulator in between.

14. The method of claim 13 further comprising the steps of:

inserting a third switch head through an opening in a wall of said first housing section and joining the first switch head to the first distal end of the second connecting conductor; and

inserting a fourth switch head through an opening in a wall of said third housing section and joining the fourth switch head to the second distal end of the second connecting conductor.

15. The method of claim 14, further comprising the steps of:

inserting a switch head insulator plate having electrical contacts on opposing sides between said first and third switch heads through an opening in said first housing section.

16. An insulator plate for a switch matrix, comprising:

a plate having four equally spaced tabs projecting outward from the rim of the plate and a plurality of ports provided there through;

a rotary bearing disposed within said plate; and

wherein said plate is composed of an insulating material.

17. The insulator plate of claim 16, wherein said plate is composed of Teflon.

18. An insulator plate for a switch matrix, comprising: (4)

a plate having a first and a second set of finger contacts mounted on opposing sides and electrically connected through said plate; and

a corona shield provided around said first and second set of finger contacts.

19. A method of replacing an insulator plate of a switch matrix, comprising the steps of: (5)

loosening a thimble section from a first housing section of a switch matrix to free an insulator plate secured there between;

rotating said insulator plate to align a plurality of tabs projecting outward from the rim of the plate with slots provided in the housing section; and

removing said insulator plate from between said housing section and said thimble section.

(6)

20. A switch matrix, comprising:

a first transmission direction means for directing an RF transmission from a first transmission line to a first antenna and for preventing RF transmission from said first transmission line to said first antenna;

a second transmission direction means for directing an RF transmssion from said first transmission line to a second antenna and for preventing RF transmission from said first transmission line to said second antenna;

a housing means for containing said first and second transmission direction means;

a first insulating means for isolating said first transmission direction means from said housing means;

a second insulating means for isolating said second transmission direction means from said housing;

a first rotating means contained within said first insulating means for improving rotation of said first transmission direction means; and

a second rotating means contained within said second insulating means for improving rotation of said second transmission direction means.

21. The switching matrix of claim 20, further comprising connecting means for connecting a first transmission direction means to an adjacent transmission direction means.

22. The switching matrix of claim 21, further comprising bypass means contained in said first transmission direction means for allowing RF transmission to bypass an antenna and pass to an adjacent transmission direction means.